



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,558	06/29/2001	Moo Jong Lim	8733.461.00	5058
30827	7590	08/31/2004	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP			CHOI, JACOB Y	
1900 K STREET, NW			ART UNIT	
WASHINGTON, DC 20006			PAPER NUMBER	
			2875	

DATE MAILED: 08/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/893,558	Applicant(s) LIM, MOO JONG	
	Examiner Jacob Y Choi	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a first surface of a backlight lamp & a second surface of the backlight lamp must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 2, 6, & 20 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "the LED lamp or chip according to the present invention covers a luminescent area over 100 degrees (page 8, line 0045)," does not reasonably provide enablement for "each of the lamps/chips has a luminescent area over 100 degrees". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make LED lamp or chip that covers a luminescent area over 100 degrees the invention commensurate in scope with these claims. The specification is not enabling because there is no support behind the LED lamp or chip being able to cover 100 degrees of luminescent area. One in ordinary skill in the art would have recognized that there are many variables to control or to produce a desired output (solid angle) of the LED, including, shape of the reflector support, refracting cover ... etc. The specification does not provide a how the LED is capable of covering over 100 degrees of luminescent area and one in ordinary skill in the art would not reasonably apprised of the scope of the invention.

Note: Meggs et al. (USPN 4,521,835) clearly shows enablement that the LED is capable of covering over 100 degrees of luminescent area (figure 2)

"The housing member 4 can also provide a dual function in its interface with the lighting elements 18. The prime function is its ability to distribute the light from the lighting element 18 in an optimally efficient manner. In this regard, the structure disclosed in FIGS. 2 and 3 and also FIGS. 5 through 7 define various configurations for the distribution of light. Preferably the light will be distributed over a field angle of at least $\pm .65$ degrees about the normal to the

Art Unit: 2875

axis of the light element 18, as viewed in FIG. 2. The design intent is to utilize all the light available, so that an auxiliary power source can be optimized in the terms of weight. Thus, to achieve the advantages of the present invention, it is important for the upper light transmission portion of the housing member 4 to have a configuration which directs the light from the lighting elements 18 through an upper light emitting surface to a predetermined field angle that will insure viewing without wasting any of the power and light which is generated.'

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 5, 11-14, & 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Mochizuki (USPN 6,386,720).

Regarding claim 1, Mochizuki discloses a liquid crystal display (17) including a reflection plate (4), and a diffusion plate (160), the backlight unit using LED as a backlight lamp, wherein a plurality of lamps are arranged such that LED chips realizing R, G, and B colors are built in the respective lamps (figures 9A-9C & applicant's prior art figure 2).

Regarding claim 5, Mochizuki discloses a liquid crystal display including a reflection plate, and a diffusion plate, the backlight unit using LED as a backlight lamp, wherein a plurality of unit chips are arranged such that LED chips realizing R, G, and B colors are built in the respective unit chips (6-1 to 6-3).

Regarding claims 11 & 13, Mochizuki discloses a light-guide plate (1).

Regarding claims 12 & 14, Mochizuki discloses the plurality of lamps is arranged between the reflection plate (4) and the diffusion plate (160).

Regarding claim 19, a reflection plate (4), a first surface of a backlight lamp (front side each LED(s)) on the reflection plate, the backlight lamp including a plurality of lamps arranged in a plurality of rows (figures 9B, 9C), each of the plurality of lamps including LED chips realizing R, G, B colors (figures 9A-9C & applicant's prior art figure 2); a diffusion plate (160) on a second surface of the backlight lamp (rear side of each LED(s)), the first surface opposing the second surface (figures 8A & 8B), and a liquid crystal display panel (17) on the diffusion plate (160).

Note: claims in a pending application should be given their broadest reasonable interpretation. *In re Pearson*, 181 USPQ 641 (CCPA 1974).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 4, 7, 8, 21, & 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki (USPN 6,386,720).

Regarding claims 3, 4, 7, 8, 21 & 22, Mochizuki discloses the claimed invention, explained above. In addition, Mochizuki teaches tight fit between the lamps and the diffusion plate. It would have been obvious matter of design variation to disclose a

specific intervals / distance between LEDs and the diffusion plate, since applicant has not disclosed that the specific interval / distance solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well without the specific interval / distance. In addition, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claims 21 & 22 Mochizuki discloses the claimed invention, explained above. In addition, Mochizuki teaches tight fit between the lamps and the diffusion plate. It would have been obvious matter of design variation to disclose a specific intervals / distance between LEDs and the diffusion plate, since applicant has not disclosed that the specific interval / distance solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well without the specific interval / distance. In addition, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

8. Claims 2, 6, & 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki (USPN 6,386,720) in view of Meggs et al. (USPN 4,521,835).

Regarding claims 2 & 6, Mochizuki discloses the claimed invention, except the specific details of the lamps has a luminescent area over 100 degrees. Meggs et al. clearly shows (figure 2) and teaches that the LED is capable of covering over 100 degrees of luminescent area. It would have been obvious matter of design variation to

modify the content of the LED to produce specified angel output, since applicant has not disclosed that the lamp has a luminescent area over 100 degrees solves any stated problem or is for any particular purpose and it appears that the invention would perform accordingly.

Regarding claim 20, Mochizuki discloses the claimed invention, except the specific details of the lamps has a luminescent area over 100 degrees. Meggs et al. clearly shows (figure 2) and teaches that the LED is capable of covering over 100 degrees of luminescent area. It would have been obvious matter of design variation to modify the content of the LED to produce specified angel output/emission angel, since applicant has not disclosed that the lamp has a luminescent area over 100 degrees solves any stated problem or is for any particular purpose and it appears that the invention would perform accordingly.

9. Claims 1, 5, & 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tokunaga (USPN 5,375,043) in view of applicant's disclosed prior art (figures 1 & 2).

Regarding claim 1, Tokunaga discloses a liquid crystal display (3) including a reflection plate (1a), the backlight unit using LED as a backlight lamp, wherein a plurality of lamps are arranged such that LED chips realizing R, G, and B colors are built in the respective lamps (claim 1 of Tokunaga & applicant's prior art figure 2). Tokunaga discloses the claimed invention except for a diffusion plate. Applicant's disclosed prior art (figure 1 & 2) teaches the requirements of a diffusion plate for the liquid crystal

display. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use modification in Tokunaga, as taught by applicant's disclosed prior art in order to provide a uniform brightness of the dispersed light.

Regarding claim 5, Tokunaga discloses a liquid crystal display (3) including a light-guide plate (1), a reflection plate (1a), the backlight unit using LED as a backlight lamp, the liquid crystal display following a field sequence, wherein a plurality of chips are arranged such that LED chips realizing R, G, and B colors are built in the respective lamps (claim 1 of Tokunaga & applicant's prior art figure 2). Tokunaga discloses the claimed invention except for a diffusion plate. Applicant's disclosed prior art (figure 1 & 2) teaches the requirements of a diffusion plate for the liquid crystal display. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use modification in Tokunaga, as taught by applicant's disclosed prior art in order to provide a uniform brightness of the dispersed light.

Regarding claims 11 & 13, Tokunaga in view of applicant's admitted prior arts disclose the claimed invention, explained above. In addition, mentioned prior art disclose a light-guide plate.

Regarding claims 12 & 14, Tokunaga in view of applicant's admitted prior art disclose the claimed invention, explained above. In addition, mentioned prior arts disclose the plurality of lamps is arranged between the reflection plate and the diffusion plate.

10. Claims 9 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stinson (USPN 4,992,704).

Regarding claim 9, Stinson discloses three LED chips built in each of the lamps, the three LED chips realizing R, G, and B colors respectively, wherein the lamp are turn on/off according to a sequence of a R chip, a G chip, and a B chip in each of the rows (figure 3; column 3, lines 10-30). Stinson discloses the claimed invention except a plurality of lamps. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have plurality lamps of Stinson, since it has been held that mere duplication of the essential working parts of the device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claim 10, Stinson discloses three LED chips built in each of unit chips, the three LED chips realizing R, G, and B colors respectively, wherein the unit chips are turned on/off according to a sequence of a R chip, a G chip, and a B chip in each of the rows (figure 3; column 3, lines 10-30). Stinson discloses the claimed invention except a plurality of lamps. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have plurality lamps of Stinson, since it has been held that mere duplication of the essential working parts of the device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

11. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stinson (USPN 4,992,704) in view of either Mochizuki (USPN 6,386,720) or Tokunaga (USPN 5,375,043).

Regarding claims 15-18, Stinson discloses the claimed invention, except the new LED (red, green, & blue) being used as a backlight for the liquid crystal display. Monchizuki and Tokunaga teaches that the LCD comprising a light-guiding plate and the lamps being arranged between the reflection plate and the diffusion plate, which utilizes LED chips combining red, green, & blue colors to produce desired color / white light. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use modification in Stinson as taught by either Monchizuki or Tokunaga in order to utilize programmable light emitting diode that contains red, green, & blue, same as lighting emitting sources of either Monchizuki or Tokunaga, for the liquid crystal display. Some of the liquid crystal display utilizes a white light source including benefits of light emitting diodes. Benefits and reasons for combining mentioned references for utilizing LED(s) for the LCD backlight includes eliminating uneven illumination by not using a common white fluorescent light source, providing a lighting unit having a reduced size by having multiple colored LED(s) in a single housing, and capable of not only functioning as a mere lighting unit but also varying the luminance and color of illumination.

Response to Amendment

12. Examiner acknowledges that the applicant has newly added claims 19-22.

Response to Arguments

13. Applicant's arguments filed 07/06/2004 fully considered but they are not persuasive.

In response to applicant's argument that there is not a reasonable explanation as to why the scope of protection provided by a claim is not adequately enabled by the disclosure, the examiner would like to point out a prior art reference, Wilson et al. (USPN 6,056,420), Table 1, shows different characteristics of each LEDs that are manufactured by a different company, which includes difference in an emission angle. Applicant's originally filed specification/claim(s) establishes a reason to doubt the enabling support as set forth under 35 U.S.C. 112. Because originally filed specification does not provide an adequate description of "*each of the lamps has a luminescent area over 100 degrees*" as claimed in claims 2, 6, & now 20. Table 1 of Wilson et al. shows that listed/commonly manufactured LEDs has emission angel of 20-45 degrees which is substantially different then applicant's LED(s) which has an luminescent area over 100 degrees. One of ordinary skilled in the art would have not adequately convey how each of the lamp/LEDs could have an luminescent area over 100 degrees without any detailed description or LED(s) structure such as shape of the reflector support, refracting cover ... etc or even who manufactures certain LED(s).

Once again, the burden is on applicant, not the examiner, to explain and disclose all of the specific details of the invention in a clear manner in the patent application. Applicant has failed to point out where in specification provides a reasonable amount of guidance with respect to enablement under 35 U.S.C. 112.

In response to applicant's arguments, the recitation "field sequence" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

In response to applicant's argument that the references fail to show certain features of applicant's invention, applicant must discuss the references applied against the claims, explaining how the claims avoid the references or distinguish from them. In addition, the word "plate" is defined as a smooth, flat, relatively thin, rigid body of uniform thickness and Mochizuki clearly disclose the claimed limitation. Also the word "unit" is defined as an individual, group, structure, or other entity regarded as an elementary structural or functional constituent of a whole. Claims in a pending application should be given their broadest reasonable interpretation. *In re Pearson*, 181 USPQ 641 (CCPA 1974).

Conclusion

14. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the

application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

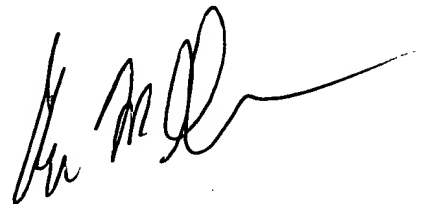
Wilson et al. (USPN 6,056,420) - illuminator

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Y Choi whose telephone number is (571) 272-2367. The examiner can normally be reached on Monday-Friday (10:00-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JC

A handwritten signature in black ink, appearing to read 'T. M. Sember', with a long horizontal flourish extending to the right.

THOMAS M. SEMBER
PRIMARY EXAMINER